IN THE SPECIFICATION:

Please replace the paragraph beginning at page 3, line 15 with the following rewritten paragraph:

--Various solutions to the problems of shaping glass tubes are disclosed in Applicants' co-pending ~~applications titled "Apparatus and Method For Shaping Glass Tubes" (Application~~ Application Serial No. 09/497,044, filed February 2, ~~2002) and "Apparatus and Methods For Shaping Glass Tubes With Molds" (Application Serial No. 09/497,043, filed February 2, 2000)~~ 2000, and U.S. Patent No. 6,536,239. However, in the molding operation disclosed in those applications, the exhaust tube must be heated to a very high temperature by means of a torch until the end region of the tube becomes soft. Then, the torch is removed and the mold pieces are applied to the end region of the tube. During this time the torch is removed and until the mold pieces are applied, the end region of the tube undergoes some cooling whereby, when the mold is applied, the tube may not have the desired softness. Overheating the tube end to compensate for the ensuing cooling may result in the tube end deforming in an undesired manner. The prior art schemes also require that the torch be moved via a motor or other control means under relatively high temperature conditions.--

Please replace the paragraph beginning at page 10, line 17, with the following rewritten paragraph:

--The end section of tube 12, beginning at point 125, and the opening (mouth) 66 of tube 12 are shaped to accommodate tube 10. Thus, as shown in Figs. 2A and 2B, the rim region 17 of exhaust tube 12, extending between ~~cross line 13 and end point~~ shoulder 19 and end 14, is specially shaped to accomplish several functions. First, beginning at ~~line 13~~ shoulder 19,

the inner diameter of tube 12 is now increased for a length "L2", until the end ~~edge~~ 14 of tube 12. The inner diameter of tube 12 is increased from a value of d2=d1, at ~~point 13~~ shoulder 19, to a value which is just a little greater than d_{o1}, at end ~~point~~ 14; where d1 and d_{o1} are, respectively, the inner and outer diameters of starter tube 10. The increase in the dimension of the opening of tube 12, between points 13 and 14, is just enough to ensure that tube 10 can be "snuggly" inserted into tube 12 and to ensure that both tubes, when mated, have a common center line.--

Please replace the paragraph beginning at page 11, line 6, with the following rewritten paragraph:

--Note that decreasing the inner diameter of tube 12 from point 125 to ~~point 13~~ shoulder 19 and then increasing the inner diameter of tube 12 from ~~point 13~~ shoulder 19 until the end ~~edge 14~~, produces a "stop" within tube 12 which prevents the starter tube from being inserted into tube 12 past ~~"cross line" or point 13. As shown in Figs. 2, 2A and 2B, along line 13, within tube 12, there is formed an L-shaped ledge (and/or lip), 19, at mating surface 13 so that the starter tube 10 and the exhaust tube 12 can be nested and joined with each other, while preventing tube 10 from penetrating past surface 13 into tube 12~~ shoulder 19. As shown in the figures, between points 13 and 14, the outer wall of exhaust tube 12 includes ~~side extensions 21a, 21b which extend beyond ledge~~ an extension 21 which extends beyond shoulder 19 for a distance "L2". In the region ~~between extensions 21a, 21b~~ of extension 21, the inner diameter of tube 12 is just a little greater than the outer diameter of tube 10. This ensures that tube 10 can be inserted ~~"snuggly"~~ snugly within the opening of tube 12 for a distance of approximately L2. As further discussed below (regarding Fig. 6) when heat is supplied to tube 12 after the insertion therein of tube 10, the ~~side extensions 21a, 21b,~~ extension 21 of tube 12 may "collapse" about

tube 10, thereby fusing/joining tubes 10 and 12 to form a unitary combined component, referred to herein as a "preform". Thus, the cross section of the exhaust tube profile is also shaped so as to provide a sufficient amount of "flowable" material within extension ~~21a, 21b~~ 21 which fuses into a smooth walled inner diameter joint upon completion of the heating (joining and/or fusing) process. That is, the inner walls at the interface of the starter and exhaust tubes are smooth, after the two have been joined or fused.--

Please replace the paragraph beginning at page 13, line 11, with the following rewritten paragraph:

--The shapes and functions of molds embodying the invention and their application to exhaust tubes are shown in Figs. 3A, 3B, 4A, 4B, 4C and 4D. In Fig. 3A there is shown a simplified cross sectional diagram of a 3-piece mold which is about to be applied to a hollow cylindrical tube 12. In Figs. 3B, 4A, 4B and 4C, the tube is shown as shaped by the mold. The 3-piece mold includes elongated side sections 22a, 22b and an end plug, or cap, 23. The side sections 22a and 22b are applied along an end section 121 of tube 12, extending from a point 127, past the bending point 125, the stop line 13 and past the end 14 of tube 12. The side sections impart a smooth taper to the end section of the tube 12 and reduce its inner diameter gradually such that at a point 13, the inner diameter of tube 12 matches that of starter tube 10, intended to be mated with tube 12. The resulting end section of tube 12 may be generally characterized as ~~an oblate cone like~~ a substantially conical section. The end plug 23 includes a solid cylindrical stub 230 and an end cap section 232. The solid cylindrical stub section 230 is inserted into the orifice 66 at the selected end of hollow cylindrical tube 12 to shape the rim of the tube and to prevent the inner diameter of the tube 12 from decreasing below a predetermined

value (e.g., approximately d1 of the mating starter tube). The solid cylindrical section 230 of plug 23 also has two sections (231, 233) of different size, whereby a step (see Figs. 4A, 4B and 4D) is formed between the two sections. The step causes ~~a ledge (lip or groove)~~ <u>the shoulder</u> 19 to be produced within the inner surface of tube 12 ~~(at point 13)~~ while the portion of the tube squeezed between the inner surfaces of mold pieces 22a, 22b and the outer surface of the cylindrical stub ~~230~~ <u>section 231</u> results in ~~extensions 20, 20b~~ <u>extension 21</u> between lines 13 and 14, as shown for section 17 in Figs. 2, 2A and 2B. The end cap ~~section~~ 232 functions to effectively seal the end <u>14</u> of tube 12. The application of the ~~3~~ mold pieces, 22a, 22b and 23, to a selected end of tube 12, after it has been rendered malleable, causes tube 12 to assume the form shown in Figs. ~~1, 2, and 3B~~ <u>2, 2A, and 2B</u>.--

Please replace the paragraph beginning at page 16, line 11, with the following rewritten paragraph:

--From point 125 until the edge 123 (corresponding to ~~edge 13~~ <u>shoulder 19</u> on tube 12), the inner surfaces of the side pieces 22a, 22b, taper down, conically, while leaving an opening 66a at the end of the mold (which also forms opening 66 in tube 12). At the point 123 on the inner surfaces of the mold (corresponding to ~~edge 13~~ <u>shoulder 19</u> of tube 12), the two side pieces, when joined, leave an opening 66a. The opening 66a needs to be sufficiently large to ensure that the inner diameter of the "shrunken" exhaust tube at ~~point 13~~ <u>shoulder 19</u> is approximately equal to the inner diameter of starter tube 10 while the outer diameter of tube 12 between lines 13 and 14 is just a little larger than the outer diameter of starter tube 10. This enables the starter tube to be inserted ~~"snuggly"~~ <u>snugly</u> into the opening of tube 12.--

Please replace the paragraph beginning at page 16, line 22, with the following rewritten paragraph:

--The two elongated side pieces 22a, 22b are complementary to each other and are intended to be joined along walls, 41a, 41b, so as to encircle tube 12 along its length, near its end 14 (the right hand side in the figures). The inner surfaces of the two side pieces 22a, 22b extend from a ~~first, or front,~~ front end 44 to a ~~second, or back,~~ back end 54. The inner surfaces 26a, 26b, of the side molds define two general regions. The ~~first (or front)~~ front region is ~~an arcuate~~ a cavity 25 which extends from the front end 44 to a ridge 46 for receiving the tube 12 and imparting a ~~conic~~ conical shape to the end section 121 of tube 12. Each front region of the side pieces 22a, 22b has two sections. The ~~front region~~ first section extends from the first end 44 to a point 125a and the ~~rear (second) region~~ second section extends from point 125a to the ridge 46. Within the ~~front region~~ first section the inner surfaces of the side pieces are cylindrical. Within the second ~~region~~ section (from point 125a to ridge 46) the cavity narrows forming a tapered segment 129a. Ridge 46 is bordered by a smooth ~~annular~~ cylindrical ring 52. The ~~second (or back)~~ back region of the inner surfaces 26a, 26b of the molds is for receiving the solid cylindrical stub 230 of end plug 23 which controls the diameter of the end edge of tube 12 and shapes the rim and opening of tube 12. The second region of the side pieces extends from the back end of ridge 46 which is defined by a back wall 58 ~~(facing leftward)~~, which is a smooth annular wall, A ledge 56 extends from back wall 58 to the back end 54 of the mold. When the two elongated side mold pieces 22a, 22b are joined together as shown in ~~Fig, 3B~~ Fig. 3B, a circular opening 66a is formed around ~~annular~~ ring 52 corresponding to opening ~~in the rear of~~ 66 of exhaust tube 12.--

Please replace the paragraph beginning at page 18, line 4, with the following rewritten paragraph:

--The end plug ~~(or cap)~~ 23 may be better described with reference to the simplified cross sectional diagram of Fig. 4D. Plug 23 includes an end cap section 232 from which extends (leftwards in the figures) a solid cylindrical stub 230. Solid cylindrical stub 230 has a first section 231 of diameter d_o1 and length L2 extending from the "inner" surface 234 of end cap section 232. The stub 230 has a second section 233 extending from the first section 231. The second section 233 is of diameter d1 and its length is not critical, so long as it is long enough to ensure that the inner diameter of tube 12 at ~~point 13~~ <u>shoulder 19</u> is established. Thus, end plug 23 ensures that the opening 66 at ~~point 13~~ <u>shoulder 19</u> of tube 12 is approximately equal to a first value (e.g., d1) and that the inner diameter of the tube along length L2, between point 13 and end edge 14, is just greater than a second value (e.g., d_{o1}) to form a ledge or lip a distance L2 from the end 14 of tube 12 and to enable a starter tube to nest within the opening of tube 12 and abut against ~~ledge~~ <u>shoulder</u> 19. In a particular embodiment, the values of d1 and d2 were equal to 22 millimeters, d_o1 was equal to 28 millimeters, d_o2 was equal to 29 millimeters, L1 was equal to 25 millimeters and L2 was equal to 5 millimeters and dt2 was approximately 55 millimeters.--

Please replace the paragraph beginning at page 18, line 21, with the following rewritten paragraph:

--End plug ~~(or cap)~~ 23 may be held by a rod 34, or be part of the rod 34 (see Figs. 3A, 3B). Plug 23 includes a solid cylindrical stub 230 extending from the ~~back cylindrical portion~~ <u>end cap</u> 232 of plug 23. A portion 232a (see Fig. 4C) of back portion 232 is designed to fit within the rear opening formed by the two side pieces, 22a, 22b. The "inner" surface 234 of

portion 232a is intended to fit against the wall 58 while resting on ledge 56. The solid cylindrical stub 230 extends through the ~~annular~~ ring 52 and can be inserted within the rear hollow neck of tube 12, to control the inner and outer diameters of tube 12 and the shape of the tube opening in the end region between points 13 and 14. The solid cylindrical stub 230, includes a ~~step~~ <u>section</u> 231 extending for a length L2 along the stub from the back plane 234. The ~~step~~ <u>section 231</u> causes the rim of tube 12 to have a desired shape such as the one shown in Figs. 2, 2A and 2B. In the figures, a step ~~31~~ is shown~~,~~ <u>between sections 231 and 233.</u> However, a curve and/or other shaping structure or profile matching structure may be used.--

Please replace the paragraph beginning at page 19, line 22, with the following rewritten paragraph:

--Referring to Fig. 5, there is shown an apparatus for semi-automatically, or automatically, applying the mold pieces to a hollow cylindrical glass tube 12 for shaping a selected end 121 of the tube. Tube 12 is firmly positioned within a central opening 64 of a rotatable chuck 62 of a horizontally mounted controlled speed lathe 60. The lathe 60 supports tube 12 and ensures that tube 12 is rotated at a controlled speed. A heat source 16 is positioned such that the selected end portion, 121, of tube 12 is heated to a temperature ~~of, for example, approximately 2,100 degrees centigrade,~~ which causes the end of the tube to become soft and malleable. The heat source 16 may be an oxygen-hydrogen torch, but any other suitable heat source may be used. The temperature of the heat source applied to the tube can be measured by a pyrometer 80 having an output which can be coupled to control circuitry (see Fig. 9) for controlling the heat supplied to the tube end, 121. The output of pyrometer 80 may also be used to control the application and retraction of the heat source, 16, and the application and retraction

of the mold pieces applied to the tail end of the tube 12. The heat source 16 may be moved back and forth via motor 65 which may be controlled by an output from pyrometer 80, or by other means such as an optical sensor (e.g., photosensor 87), or manually, and/or by any other independent or related means.--